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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER	
THERKORN, ERNEST G	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/806,198	BESTE ET AL.	
	Examiner	Art Unit	
	Ernest G. Therkorn	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *22 June 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-4,6-13,17,18 and 20-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-4, 6-13, 17-18, and 20-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

Claims 18 and 20 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. No support can be found for "providing the contaminated ionic liquid .... non-polar organic solvent,". As such, the claims are considered to be drawn to new matter.

Claims 1-4, 6-13, 17, 18, and 20-24 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. The metes and bounds of "a substance having a vapor pressure in the mixture that prohibits complete removal of the substance from the mixture by distillation" and "a substance that interacts with the at least one ionic liquid so as to prohibit complete removal of the substance from the mixture by distillation" can not be determined. It is not clear what degree of separation is intended by the applicants to have complete separation. Page 11, lines 20-21 of the instant specification implies that the purification is merely not economical. In any event, what can and can not be distilled would appear to be a function of the skill of the distiller and would change over time. As such, the claims are considered to be indefinite. Claim 24's "no measurable vapor pressure" is considered to be indefinite because what can and can not be measured would appear to be a function of the skill of the measurer, his tools, and would change over time.

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.
>
> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 1-3, 8-11, 13, 17, 18, and 20-24 are rejected under 35 U.S.C. 102(B) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Earle (U.S. Patent Publication No. 2004/0015009). The claims are considered to read on Earle (U.S. Patent Publication No. 2004/0015009). However, if a difference exists between the claims and Earle (U.S. Patent Publication No. 2004/0015009), it would reside in optimizing the elements of Earle (U.S. Patent Publication No. 2004/0015009). It would have been obvious to optimize the elements of Earle (U.S. Patent Publication No. 2004/0015009) to enhance separation.

Claims 1-3, 8-11, 13, 17, 18, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291). At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) in the clarity that nitrotoluene is a polar high boiling compound. Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 discloses that nitrotoluene boils at 218 degrees Celsius. This is considered to be high boiling. Kawaki (U.S. Patent No. 5,543,474) on column 12, lines 8-10 discloses that nitrotoluene is polar. Thiem (U.S. Patent No. 4,751,291) on column 2, lines 36-41 discloses that nitrotoluene is polar. It would have been obvious that Earle (U.S. Patent Publication No. 2004/0015009)'s nitrotoluene is a polar high boiling compound because Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 discloses that nitrotoluene boils at 218 degrees Celsius and either because Kawaki (U.S. Patent No. 5,543,474) on column 12, lines 8-10 discloses that nitrotoluene is polar or because Thiem (U.S. Patent No. 4,751,291) on column 2, lines 36-41 discloses that nitrotoluene is polar.

Claims 2, 7, 9, 18, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) as applied to claims 1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Snyder,

Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411. At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) in reciting use of ion exchange chromatography. Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions. It would have been obvious to use ion exchange chromatography in Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) as his particular type of chromatography because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461, either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979,

pages 270-272, 285, and 410-411 as applied to claims 2, 7, 9, 18, and 20-24 above, and further in view of Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219. At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461, either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 in the clarity of reciting a resin. Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography. It would have been obvious that Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461, either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 uses a resin because Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) as applied to claims

1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Gerhold (U.S. Patent No. 4,402,832). At best, the claim differs from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) in reciting use of a continuous chromatography process. Gerhold (U.S. Patent No. 4,402,832) (column 1, lines 29-39) discloses that use of a simulated moving bed is a very successful process for separating components from a feed mixture. It would have been obvious to use a continuous chromatography process in Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) because Gerhold (U.S. Patent No. 4,402,832) (column 1, lines 29-39) discloses that use of a simulated moving bed is a very successful process for separating components from a feed mixture.

Claims 6, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) as applied to claims 1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411. At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary,

McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) in reciting use of water as a solvent and reversed phase silica gel. Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 on pages 270-272 and 285 discloses that reversed phase silica gel packings are the closest to a universal system for modern liquid chromatography and that water is usually used as a base solvent. It would have been obvious to use water as a solvent and reversed phase silica gel in Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 on pages 270-272 and 285 discloses that reversed phase silica gel packings are the closest to a universal system for modern liquid chromatography and that water is usually used as a base solvent.

Claims 11, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) as applied to claims 1-3, 8-11, 13, 17, 18, and 20 above, and further in view of Wasserscheid (Ionic Liquids in Synthesis). At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S.

Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) in reciting evaporating low boiling compounds. Wasserscheid (Ionic Liquids in Synthesis) discloses on page 17, lines 13-15 discloses that any volatile compound may be removed from an ionic liquid by distillation. It would have been obvious to evaporate low boiling compounds in Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291) because Wasserscheid (Ionic Liquids in Synthesis) discloses on page 17, lines 13-15 discloses that any volatile compound may be removed from an ionic liquid by distillation.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Wasserscheid (Ionic Liquids in Synthesis) as applied to claims 11, 18, and 20-24 above, and further in view of Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 and Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219. At best, the claims differ from Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Wasserscheid (Ionic Liquids in Synthesis) in reciting use of a resin. Snyder, Introduction to Modern Liquid

Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions. Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography. It would have been obvious that Earle (U.S. Patent Publication No. 2004/0015009) alone or further in view of Hackh's Chemical Dictionary, McGraw-Hill Book, New York, 1972, page 461 and either Kawaki (U.S. Patent No. 5,543,474) or Thiem (U.S. Patent No. 4,751,291), and Wasserscheid (Ionic Liquids in Synthesis) uses a resin because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions and Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography.

Claims 1-3, 8-11, 13, 17, 18, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009). Page 10, line 39 through page 11, line 39 of the specification would appear to be the prior art section of the specification. Page 11, lines 14-21 of the specification would appear to concede that the separation of high-boiling impurities from

ionic liquids by distillation is well known to be difficult. Earle (U.S. Patent Publication No. 2004/0015009) (paragraph 43) discloses chromatography, an adsorption process, is a known alternative to distillation for separating ionic liquids. It would have been obvious to chromatographically separate high-boiling impurities from ionic liquids because page 11, lines 14-21 of the specification would appear to concede that the separation of high-boiling impurities from ionic liquids by distillation is well known to be difficult and Earle (U.S. Patent Publication No. 2004/0015009) (paragraph 43) discloses chromatography, an adsorption process, is a known alternative to distillation for separating ionic liquids.

Claims 2, 7, 9, 18, and 20-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) as applied to claims 1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411. At best, the claims differ from that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) in reciting use of ion exchange chromatography. Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions. It would have been obvious to use ion exchange chromatography in that which is conceded to old on page 10, line 39

through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 as applied to claims 2, 7, 9, 18, and 20-24 above, and further in view of Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219. At best, the claims differ from that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 in the clarity of reciting a resin. Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography. It would have been obvious that that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-

411 uses a resin because Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography.

Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) as applied to claims 1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Gerhold (U.S. Patent No. 4,402,832). At best, the claim differs from that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) in reciting use of a continuous chromatography process. Gerhold (U.S. Patent No. 4,402,832) (column 1, lines 29-39) discloses that use of a simulated moving bed is a very successful process for separating components from a feed mixture. It would have been obvious to use a continuous chromatography process in that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) because Gerhold (U.S. Patent No. 4,402,832) (column 1, lines 29-39) discloses that use of a simulated moving bed is a very successful process for separating components from a feed mixture.

Claims 6, 7, and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) as applied to claims 1-3, 8-11, 13, 17, 18, and 20-24 above, and further in view of Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979,

pages 270-272, 285, and 410-411. At best, the claims differ from that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009 in reciting use of water as a solvent and reversed phase silica gel. Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 on pages 270-272 and 285 discloses that reversed phase silica gel packings are the closest to a universal system for modern liquid chromatography and that water is usually used as a base solvent. It would have been obvious to use water as a solvent and reversed phase silica gel in that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 on pages 270-272 and 285 discloses that reversed phase silica gel packings are the closest to a universal system for modern liquid chromatography and that water is usually used as a base solvent.

Claims 11, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) as applied to claims 1-3, 8-11, 13, 17, 18, and 20 above, and further in view of Wasserscheid (Ionic Liquids in Synthesis). At best, the claims differ that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) in reciting evaporating low boiling compounds. Wasserscheid (Ionic Liquids in Synthesis) discloses on page 17, lines 13-

15 discloses that any volatile compound may be removed from an ionic liquid by distillation. It would have been obvious to evaporate low boiling compounds in that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) because Wasserscheid (Ionic Liquids in Synthesis) discloses on page 17, lines 13-15 discloses that any volatile compound may be removed from an ionic liquid by distillation.

Claims 18 and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Wasserscheid (Ionic Liquids in Synthesis) as applied to claims 11, 18, and 20-24 above, and further in view of Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 and Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219. At best, the claims differ from that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Wasserscheid (Ionic Liquids in Synthesis) in reciting use of a resin. Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions. Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for

ion exchange chromatography. It would have been obvious that that which is conceded to old on page 10, line 39 through page 11, line 39 of the specification in view of Earle (U.S. Patent Publication No. 2004/0015009) and Wasserscheid (Ionic Liquids in Synthesis) uses a resin because Snyder, Introduction to Modern Liquid Chromatography, John Wiley & Sons New York, 1979, pages 270-272, 285, and 410-411 discloses on pages 410-411 that ion exchange was the first of the various liquid chromatography methods to be used widely under modern liquid chromatography conditions and Mikes' Laboratory Handbook of Chromatographic and Allied Methods, John Wiley & Sons New York, 1979, pages 218-219 discloses that synthetic resins are of the greatest importance for ion exchange chromatography.

The remarks urge that steps (a) and (b) of claim 18 are supported by page 11 of the specification. However, the page 11, lines 10-12 reference and the page 11, lines 23-35 reference would appear to be references to prior art processes. They would not appear to be disclosed as a part of applicant's process. As such, the steps are considered to be new matter.

The remarks urge that Earle (U.S. Patent Publication No. 2004/0015009) is directed to separation by distillation and not adsorption. However, Earle (U.S. Patent Publication No. 2004/0015009) on paragraph 8 discloses that distillation and chromatography are interchangeable separation means. As such, Earle (U.S. Patent Publication No. 2004/0015009) is considered to disclose adsorption.

The remarks urge patentability based upon the phase "that prohibit(s) complete removal of the substance from the mixture by distillation" is definite. However, it is not

clear what degree of separation is intended by the applicants to have complete separation. Page 11, lines 20-21 of the instant specification implies that the purification is merely not economical. In any event, what can and can not be distilled would appear to be a function of the skill of the distiller and would change over time.

Any inquiry concerning this communication should be directed to E. Therkorn at telephone number (571) 272-1149. The official fax number is 571-273-8300.

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

Ernest G. Therkorn
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EGT
July 27, 2007